Docket No.: 0717.2013-013

Title: Bipolar Transistor with Lattice...

Inventors: Roger E. Welser et al.

500 Å Si-doped In_{O.6}Ga_{O.4}As (1 x 10¹⁹ cm⁻³)

500 Å Si-doped InGaAs Grade (1x10¹⁹ cm⁻³)

1500 Å Si-doped GaAs (5x10¹⁸ cm⁻³)

500 Å Si-doped InGaP (4x10¹⁷ cm⁻³)

500-1800 Å C-doped Ga_{1-x}In_xAs_{1-y}N_y(1.5-4.5 x 10¹⁹ cm⁻³)

x≈3y

7500 Å Si-doped GaAs (1x10¹⁶ cm⁻³)

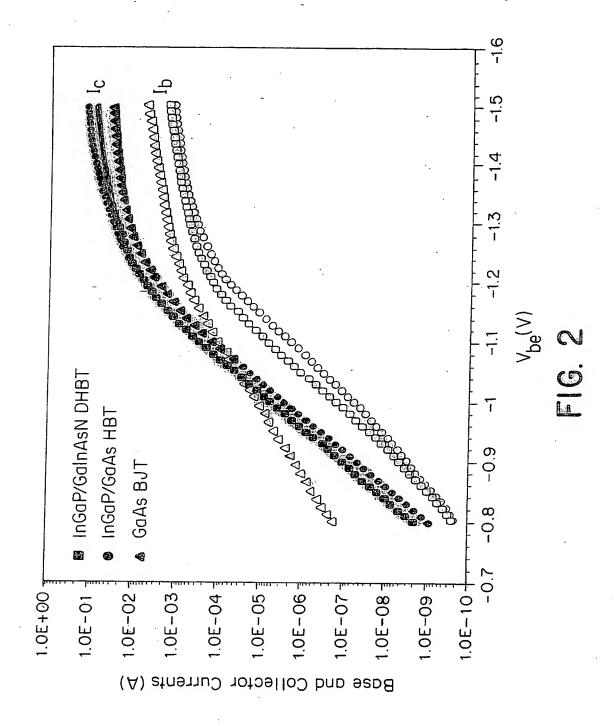
5000 Å Si-doped GaAs (5x10¹⁸ cm⁻³)

GaAs SUBSTRATE

FIG.

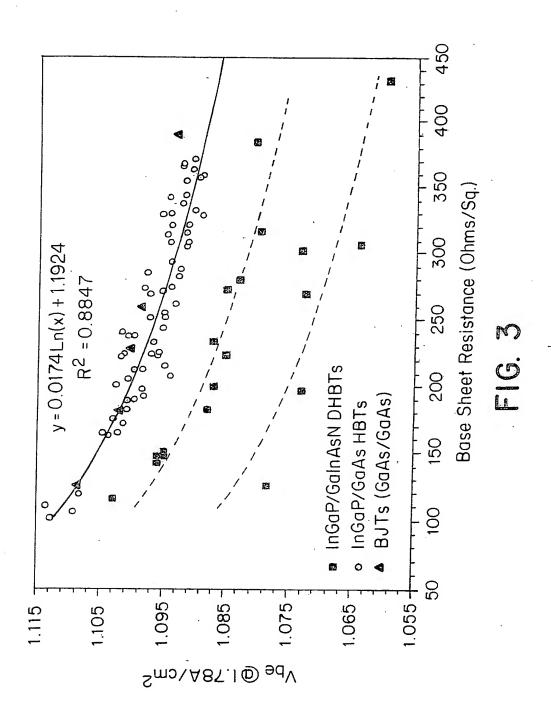
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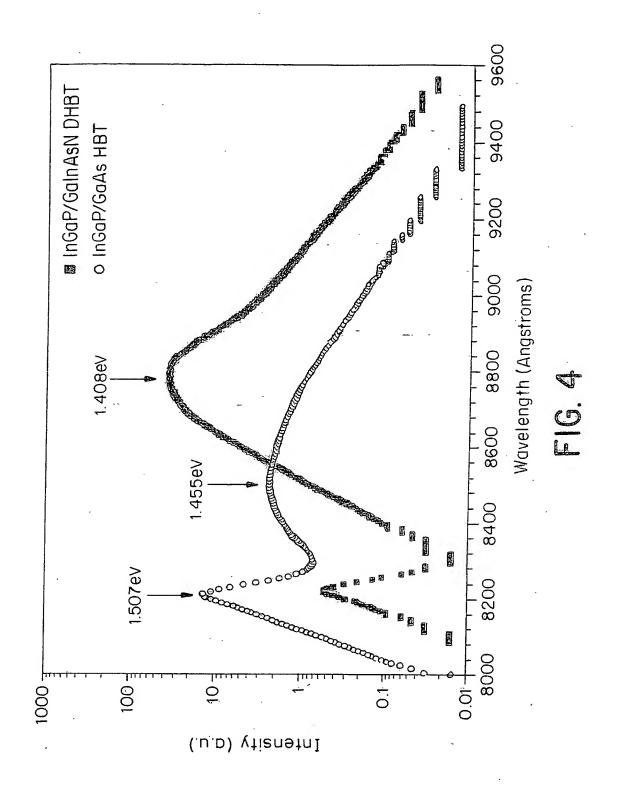


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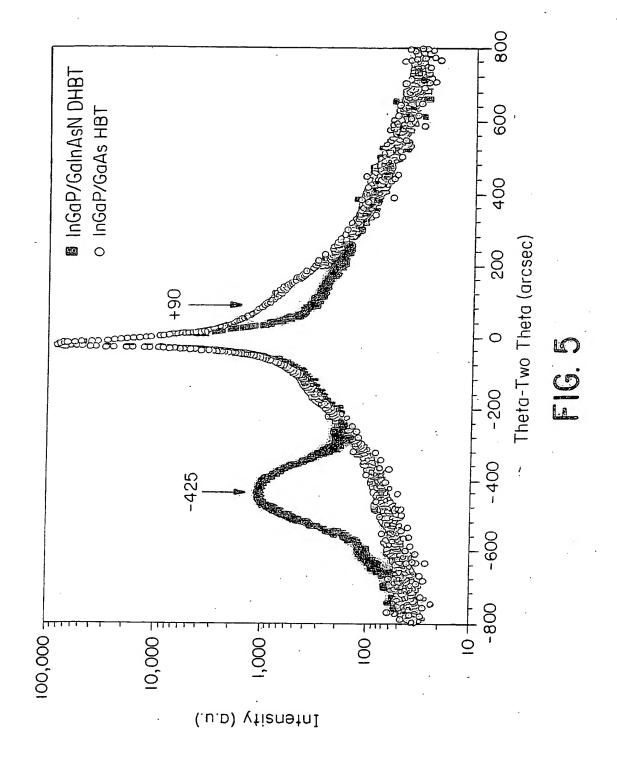
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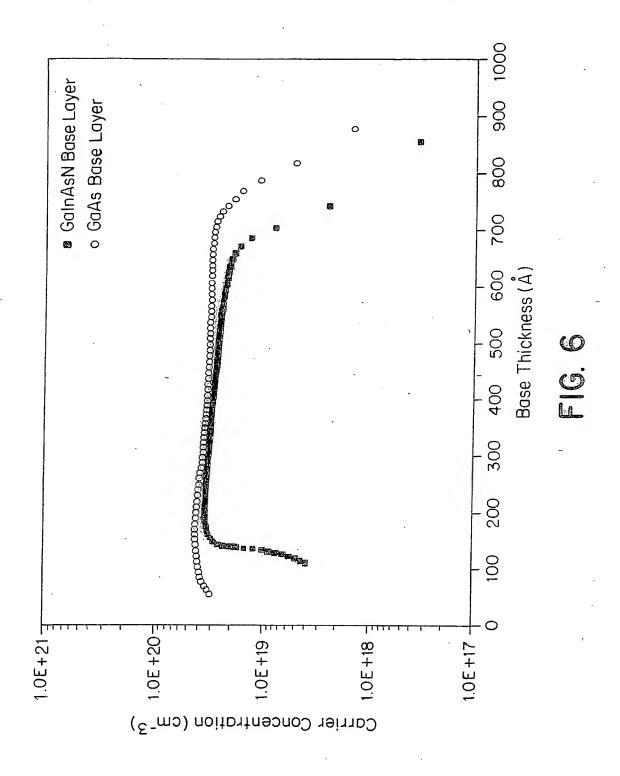


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500 Å Si-doped In _{O.6} Ga _{O.4} As (1x10 ¹⁹ cm ⁻³)
500 Å Si-doped InGaAs Grade (1×10 ¹⁹ cm ⁻³)
1500 Å Si-doped GaAs (5 x 10 ¹⁸ cm ⁻³)
500 Å Si-doped InGaP (4×10 ¹⁷ cm ⁻³)
50 Å transitional layer
500 Å C-doped-Ga _{1-\times} In _{\times} As _{1-y} N _{y} (1.5-4.5 \times 10 ¹⁹ cm ⁻³) $\times \approx 3y$ compositional grade
50 Å transitional layer
~200 Å Si-doped InGaP
4000 Å Si-doped GaAs (1 x 10 ¹⁶ cm ⁻³)
5000 Å Si-doped GaAs (5 x 10 ¹⁸ cm ⁻³)
GaAs SUBSTRATE

FIG. 7